the element hologram image EH of 0.2 mm, and an imaging angle of 49.5°, it is specified such that le = 96.0 mm, $\Delta$le = 0.2 mm, $\theta$e = 49.5°, respectively. In this instance, if n = 3 in the above equation (4), $\Delta$ls = 0.6. Therefore, if it is set for the number of pixels in the element hologram image d2 in the parallax direction is set nx=480, a width ls of the display screen of the transmission type liquid crystal display 29 is calculated according to equation (3) to be that ls = 287.4. The viewing point distance dv in this instance, namely, the image shooting distance df of the parallax image data string D3, is calculated by the above equation (2) to be that df = dv = 311.71.

The holographic stereogram producing device 10 is supplied with the parallax image data string D3 obtained on the basis of the time spatial parameters set up as described above, and by executing the viewing point conversion processing to the parallax image data string D3 by means of the image data processing unit 11, reconstructs the element hologram image data D5 which is free from the jaggy. In the holographic stereogram producing device 10, the object light L2 is subjected to the image-modulation via the element hologram image EH which is based on this element hologram image data D5, and at the same time the holographic stereogram image H is exposed using this object light L2 and the reference image EH to be recorded on the hologram recording medium 4, and to produce the holographic stereogram 51. Therefore, this holographic stereogram 51 can replay a satisfactory quality of reproduced image 60 free from the spatial distortion, blurring and jaggy.

By the way, although the holographic stereogram 51 is corrected as to the viewing point positional information in the horizontal parallax direction by the viewing point conversion processing described above, as to the vertical direction, as-shot information at the time of capturing the parallax image data string D3 is maintained. In the holographic stereogram 51, when observed while moving the viewing point in the translation motion relative to the hologram surface 51a, in the same manner as in the case of shooting the consecutive images of the object P with the image shooting point of the camera moved in the translation motion, the reproduced image 60 of the object P is enabled to be reproduced in the vicinity of the hologram surface 51a in a satisfactory state free from the spatial distortion.

By the way, the viewing point conversion processing described above for reconstructing the element hologram image data D5 from the parallax image data string D3 is for reconstructing the new element hologram image data D5 by interchanging the element parallax images d1 in the parallax image data string D3, however, if the time spatial parameters are identical therebetween, even if it is a different parallax image data string of images having taken of a different object, the order (sequence) of its interchanging is identical therebetween. Therefore, if a data which records the sequence of interchanging of the element parallax images is prepared as a corresponding time spatial parameter having as an identical interchangeable condition that the image shooting distance df is equal to the viewing point

distance dv which is one of the time spatial parameters of the parallax image data string D3 which is an object of the viewing point conversion processing, the holographic stereogram producing device 10 can proceeds with the viewing point conversion processing efficiently by referring to this time spatial parameter provided in advance.

Namely, in the holographic stereogram producing device 10, the viewing point conversion processing is executed by the above-mentioned method only for the initial element parallax image d1 of the parallax image data string D3 so as to be able to reconstruct the element hologram image data D5 and obtain a corresponding relation between the parallax information of the parallax image data string D3 and the parallax information of the element hologram image data D5. Then, this corresponding relation is stored as the time spatial parameter as described above in the storage server 3, and/or recorded in the recording medium MD. In the subsequent viewing point conversion processing, the holographic stereogram producing device 10 reads out a desirable time spatial parameter TSP from the storage server 3 and/or recording medium MD to execute the viewing point conversion processing on the basis thereof. Therefore, for this holographic stereogram producing device 10, because the desirable time spatial parameters TSP are automatically set up in the image capture device 1 and in the graphic image data generating computer 2, and are automatically supplied therefrom, it is not necessary to execute the viewing point conversion processing with repetition of the above-mentioned arithmetic operation and the like for